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ABSTRACT

Two recreational activities, deer hunting and goose hunting, both similar in form, are compared. It was hypothesized that the activity for which participants rated the process, the goal, and the social interaction as most important to the experience and for which participants showed the strongest family ties and social support for participation would be the least substitutable. A survey of deer hunters and goose hunters revealed that despite the similarity in form between the two activities, differences in the process and goals, social interaction, and family and social support for participation in the activity, they represent different types of experience. (Author/JD)

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Process, Goal and Social Interaction Differences in Recreation: What Makes an Activity Substitutable

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ABSTRACT

Following Burton (1971) and Hendee and Burdge (1974) recreational substitutability is defined as the interchangeability of recreational activities in satisfying participants' needs, motives, or other desired outcomes. This conception rests upon the assumption that it is the experience (some combination of the process and the goal of the activity along with the social interaction accompanying the activity) rather than the form of the activity itself that is fulfilling to the participant.

In the present study two recreational activities, deer hunting and goose hunting, both similar in form, are compared. It was hypothesized that the activity for which participants rated the process, the goal and the social interaction as most important to the experience and for which participants showed the strongest family ties and social support for participation would be the least substitutable.

The data, using a survey of 1977 Wisconsin gun deer hunters and a survey of 1977 applicants for Horicon Zone (Wisconsin) goose hunting permits, showed that, consistent with the above hypotheses, deer hunting was rated as less substitutable by participants than was goose hunting. Over one-half of the deer hunters (59 percent) reported having few or no substitutes for their activity while this was true of only 18 percent of the goose hunters. In addition, 67 percent of the deer hunters reported that if they weren't able to hunt deer, they would miss it more than most or all of their other interests. A similar rating of importance for their activity was given by 21 percent of the goose hunters.

In spite of the similarity in form between the two activities, differences in the process and goal of the activity, the social interaction accompanying the activity and family and social support for participation suggest that they represent different types of experience.

Recent concerns by recreation managers over excessive user densities in some settings, conflict between recreationists engaging in different activities, and the allocation of scarce recreational resources has prompted an interest in the identification of groups of activities for which participation in one could be substituted for another with little or no harm to the recreationists (Hendee and Burdge, 1974; Christensen and Yoesting, 1977). Knowledge of such groups of activities may provide the opportunity to limit numbers of participants in a particular activity, limit the range of activities at a given setting, or replace an activity requiring costly facilities with a more economical one while, in each case, minimizing the negative impact on recreationists.

Of equal importance, however, might be the identification of activities with no substitutes. If it can be determined that for some individuals there are no adequate alternatives for a particular recreational activity, then it becomes incumbent upon recreation planners and managers to insure the availability of opportunities for this activity.

The concept of recreational substitutability has been defined as the interchangeability of recreational activities with simlar satisfactions accruing to the recreationist (Burton, 1971; Hendee and Burdge, 1974; Christensen and Yoesting, 1977; Phillips, 1977). This concept assumes that an individual desires to participate in a recreational experience as a vehicle for fulfilling one or more desired satisfactions. When constrained from participation, opportunities may exist which the individual feels could fulfill an adequate amount of the desired satisfactions. These perceived opportunities, then, could be substitutes for

the original, desired experience. Phillips (1977) notes that a substitute need not be perfect, but only perceived as adequate by the individual who is assumed to be satisficing rather than optimizing.

This assumption implies that it is the state or experience of recreation rather than the specific activity which is important to the recreationist. If an adequate substitute can exist for a particular activity, then it is a particular type of experience rather than a specific activity that is the important component of recreation.

A specific recreational activity can be viewed as consisting of the preparation and the process of the activity, a goal or end-state to be achieved, and the social interaction (or absence of it) that accompanies the activity. These aspects of participation in an activity comprise the recreational experience. Thus, because of differences in one or more of these aspects of the experience, two activities such a downhill skiing and cross country skiing which are very similar in form may not be substitutable for each other.

Research on recreational substitutability, however, has been primarily concerned with similarity in the characteristic form of an activity or with correlations among rates of participation to infer substitutability among activities (see Christensen and Yoesting, 1977 and Phillips, 1977). Beamon (1975) has criticized the use of factor analysis on participation rates to infer substitutability within a factor for failing to distinguish between activities that may be substitutable and those that may be complementary. Christensen and Yoesting (1977), using a sample of Northeastern Iowa residents, found little support for the notion that activities clustered on the basis of participation rates could be substituted with little or no loss in satisfaction to the recreationist.

The question of why activities differ in their degree of substitutability has received little empirical attention in recreation research. Hendee and Burdge (1974) suggest that there may be some activities, especially those that are area-based such as wilderness and natural or historic areas, for which there are no substitutes. Their analysis, however, appears to be based on the characteristic form rather than the meaning of the activity to the individual recreationist.

Phillips (1977) suggests that an individual has a certain "package of satisfactions" which are expected to be derived from the originally desired activity. She proposes that if the individual does not perceive this package, or at least an adequate part of the package of satisfactions, to be available in other opportunities, then there will be no substitute for the originally desired activity. She reports that, in a convenience sample of Canadian adults surveyed at ferry terminals in British Columbia, 46 percent of those responding indicated that they had no substitute for the activity they had previously given as their favorite which would give them similar satisfaction.

If the meaning of a recreational experience rather than its characteristic form is the basis for determining substitutable activities, then two activities similar in form may differ in the number of substitutes that are perceived to be available by the respective participants.

In the present study, two seemingly similar activities, goose hunting and gun deer hunting, will be examined. The data on goose hunters comes from a 1977 survey of applicants for goose hunting permits for the Horicon National Wildlife Refuge in East Central Wisconsin. A 1977 statewide survey of Wisconsin gun deer hunters will provide data for the deer hunters.

Social Interaction and Social Support Hypothesis

Field and O'Leary (1973) and O'Leary, Field and Schreuder (1974) contend that social interaction is often a primary aspect of recreational behavior. They suggest that the social interaction group (who one participates with) is an important variable for investigating the meaning of a recreational experience, and that the social interaction group may be a determinant of whether or not activities are substitutable.

Sofranko and Nolan (1972) found that introduction to an activity by a family member(s) was a predictor of current participation in hunting and fishing. Introduction to an activity by a relatively stable reference group such as the family would be expected to affect the importance attached to the activity as well as the amount and regularity of participation.

In addition to participation with family members, we would expect that the current peer group support for an activity would also increase the likelihood and amount of participation, and for activities that are relatively widespread and central to the individual's social circles, we would expect the activity to increase in its importance to the individual. For a particular activity, then, in which the individual has traditionally participated with family members and which also shows a widespread participation rate among peers, we would expect individuals to report fewer substitutes.

Hypothesis 1 - the least substitutable activity will show:

a) the highest ratings of importance for the social interaction accompanying the activity.

b) the greatest family ties and social support for participation.

Process/Goal Hypothesis

The other aspects of the experience, the process and the goal of the activity, could also be determinants of substitutability depending upon the importance of their contribution to the recreational experience. If an individual places a high degree of importance on one or more of the aspects of a particular experience and perceives few or no other activities where these same aspects of the experience can be achieved, the activity will have few or no substitutes for the individual.

Hypothesis 2 - The least substitutable activity will show the highest ratings of importance for the process and the goal of the activity.

METHOD

The Recreational Settings

The survey of goose hunters focuses on those applying for a permit to hunt geese in the intensive management zone surrounding the Horicon National Wildlife Refuge, managed by the United States Fish and Wildlife Service, and the Horicon Marsh Wildlife Area, managed by the Wisconsin Department of Natural Resources. This area will be referred to as the Horicon Zone. The Horicon Zone surrounds the 30,000-acre Horicon Marsh in Southeastern Wisconsin. Two-thirds of the marsh is under federal control and one-third is managed by the State of Wisconsin.

A 1977 quota of 35,000 geese to be harvested in Wisconsin was established by the Mississippi Valley Flyway Council, and the Wisconsin DNR determined that 23,000 of the geese should be harvested in the Horicon Zone. Approximately two-thirds of the Wisconsin goose kill quota, then, was allocated to the Horicon Zone in 1977, indicating that this area is a major goose hunting site for the state.

The 1977 survey of Wisconsin gun deer hunters was a statewide sample of persons applying for a deer hunting license ($7.25 for Wisconsin residents). Unlike the applicants for the Horicon Zone goose hunting permits, all who apply for a Wisconsin deer hunting license receive one. In 1977, the general statewide gun deer season was nine days, from November 19 to November 27.

The Surveys

A disproportionate stratified sample of 900 individuals was drawn from the population of 40,985 applicants for a Horicon Zone goose hunting permit. The sample was stratified by the type of permit received, which is not relevant to the current study. A more detailed explanation of the sampling procedure is given by Baumgartner (1978).

A 34-page mailed questionnare was sent to each of the 900 persons selected in the sample so that it was received the day after the close of the goose hunting season at Horicon. After the initial mailing, a reminder postcard was sent within one week and a second mailing containing an additional copy of the questionnaire was sent to non-respondents after about two and one-half weeks. Finally, after five weeks, a third copy of the questionnaire was sent by certified mail to all individuals who had not yet responded. The overall response rate for the 888 individuals who could be contacted was 85 percent, or 755 completed and usable questionnaires.

The 1977 Wisconsin gun deer hunter survey (Heberlein and Laybourne, 1978) sampled deer hunters from all counties in Wisconsin. From records in county clerks' offices of Wisconsin resident big game and voluntary sportsmen's licenses, a list of license holders was compiled for each

county. From this total population, a quota based on the respective proportions of the population was established for each country with the stipulation that at least one individual be sampled from each country.

A sample of 300 license holders was drawn and a 34-page questionnaire was mailed to each individual to be received the day following the closing of gun deer season in Wisconsin. Two hundred ninety-one questionnaires were delivered, and after a postcard reminder and two follow-up mailings, the final one by certified mail, 240, or 83 percent, of the sample who could be contacted by mail returned usable, completed questionnaires.

RESULTS

Social Interaction/Social Support

Table 1 shows the differences between the two groups of participants on their ratings of the importance of the accompanying social interaction as a reason for hunting. Deer hunters rate all three measures of social interaction, the opportunity to be with one's hunting companions, to have a good time with friends and relatives and to talk to other hunters (outgroup) in the field, as more important than do the goose hunters surveyed. Being with one's hunting companions was rated as important for 90 percent of the deer hunters and 63 percent of the goose hunters. A similar pattern exists for the opportunity to have a good time with friends and relatives with 90 percent of the deer hunters and 68 percent of the goose hunters rating this reason for hunting as important.

(Table 1 about here)

The last item in Table 1, the importance of the opportunity to talk to other hunters (outside your own hunting party) in the fields shows that neither group considers it a very important part of the experience. There is, however, a large group of goose hunters (41 percent vs. 13 percent of the deer hunters) who rate it as not at all important, probably indicating a reaction to the number of hunters in many of the goose hunting

areas around the Horicon Marsh area which often results in competition for hunting sites and even shooting simultaneously at the same bird on occasion. Deer hunters rate the social interaction accompanying the hunting experience as more important than do goose hunters.

It was also hypothesized that the least substitutable activity would show more family ties and social support for participation in the activity. Table 2 shows that deer hunters are more likely than goose hunters to be introduced to the sport by a parent or parents (46 percent vs. 30 percent) and less likely to be introduced by a friend or neighbor (25 percent vs. 41 percent). This is consistent with the younger age at which deer hunters are introduced to the sport (Heberlein and Laybourne, 1978) and suggests that deer hunters tend to have a more family-centered tie to their activity.

(Table 2 About Here)

Goose hunters tend to hunt in smaller groups, with over two-thirds (68 percent) indicating that they hunt with two or fewer people on a typical hunt, while the model category is five or more persons for the deer hunters (45 percent). Goose hunters are also more likely to hunt alone (15 percent vs. 6 percent) and the mean number of persons hunted with is only one-half as large for goose hunters than for deer hunters (2.1 vs. 4.2, $t = 28.0$, $p < .001$).

Table 3 shows that deer hunters tend to have a more extensive social network of friends and peers who also participate in the activity. While 26 percent of the goose hunters indicated that most or all of their friends are also goose hunters, 68 percent of the deer hunters indicated this.

(Table 3 About Here)

Greater family and social support for participation in the activity is shown by the deer hunters.

Process and Goal of the Activity

Table 4 contains the respective ratings of the importance of the process and the goal of the activity as reasons for participation. For the items measuring the importance of the process, deer hunters rate the opportunity to go on a trip as more important than do goose hunters, but there are no differences in the ratings of importance for the opportunity to go to a specific place or area and the opportunity to get outdoors. Deer hunters also rate the opportunity to see wildlife and to get a change of pace in their routine as more important than the goose hunters do. Over one-fourth (26 percent) of the goose hunters indicate that seeing wildlife was only slightly or not at all important in their goose hunting experiences, while this occurred for only one percent of the deer hunters surveyed.

(Table 4 About Here)

In the process of the activity, then, deer hunters attach more importance to the opportunities to go on a trip, see some wildlife, and get a change of pace from their routine than do goose hunters, but there were no differences in the importance of the opportunity to go to a specific place or area or get outdoors. The process of the activity, in general, is more important for the deer hunters.

The goal of the activity has a similar form for both goose and deer hunting, bagging game. In addition, the bag limits tend to be relatively

low in comparison to some other types of hunting. Table 4, however, shows that the importance of stalking or outsmarting game, bringing game home, and bagging a trophy animal are all rated as more important to the experience by deer hunters than by goose hunters. This may reflect the perception that deer are more scarce than geese, especially in the Horicon and East Central Zones where there are large numbers of geese congregated in a relatively small area. Heberlein and Laybourne (1978) report that on the opening day of the 1977 Wisconsin gun deer hunting season about 50 percent of the hunters in the field saw a legal deer with 35 percent getting shots. Although comparable data are not available for any specific day for goose hunting at the Horicon or East Central Zones, observation of goose hunters by the authors during the 1976 and 1977 seasons indicated that nearly everyone sees some geese and considerably more than 35 percent would get shots at a bird.

While only 57 percent of the goose hunters rate the opportunity to stalk or outsmart game as an important reason for goose hunting, 83 percent of the deer hunters rate this reason as important to them. Further, 34 percent of the goose hunters rate the opportunity to bag a trophy animal as important, while 68 percent of the deer hunters do so.

The goal of bagging game, then is more important in the deer hunting experience.

Difference in Substitutability

It was hypothesized that the least substitutable activity would show higher ratings for the importance of the accompanying social interaction and stronger social support for the activity as well as higher ratings of the importance of the process and the goal of the activity.

The data presented in Tables 1-4 have shown that, on the basis of the preceding hypotheses, deer hunters ought to report that their activity is less substitutable than would goose hunters.

Number of Reported Substitutes

Both surveys contained an item to assess the number of substitutes that participants report having for their activity.

The item was worded:

> "Considering all of the activities you could potentially do, how many substitutes do you have for goose (deer) hunting? In other words, if you couldn't go goose (deer) hunting, how many other activities are there that you would enjoy doing just as much?"

Table 5 shows the responses for the two groups of participants, with deer hunters clearly indicating that they feel there are fewer substitutes for their activity than do the goose hunters. While only 18 percent of the goose hunters indicated that there are no or only a few substitutes for their activity, 59 percent of the deer hunters responded similarly.

(Table 5 About Here)

Although the activities appear to be similar in form, both are a type of hunting experience, the two groups of participants show significant differences in their reported ability to substitute for their activity.

Overall Rating of Importance of the Activity

Differences in substitutability for the two activities are also reflected in Table 5 by the ratings of the importance of goose hunting and deer hunting with respect to the participants' other interests. The respondents were asked to indicate how much they would miss their activity

if they were unable to participate in it. While 67 percent of the deer hunters indicated that they would miss it more than most or all of their other interests, only 21 percent of the goose hunters indicated the same importance. Also, more than one-third (35 percent) of the goose hunters indicated that their activity could probably be replaced by something else just as enjoyable, but only 8 percent of the deer hunters reported being able to do this.

Discussion and Conclusions

These results suggest that the meaning of the recreational experience is the important consideration in recreational substitutability. The two activities were similar in form (both are outdoor, consumptive activities involving the hunting of wild game with a gun), but the ratings of the importance of different aspects of the experience showed that for the respective participants the two activities are different experiences. They differ with respect to important aspects of the experience, and social support for participation.

To understand substitutability we need to know more about these dimensions of the recreation experience. In general, substitutability research has focused on the behavior rather than its meaning. Two different activities, however, might satisfy needs for social interaction with the family and hence be substitutes, even though they are dramatically different forms of behavior. To understand substitutability, research should focus on the process and motivations rather than only the participation rates or the form of the various activities.

If an individual rates a variety of aspects of the experience as important reasons for participation in the activity, that activity will

will be likely to have fewer adequate substitutes. For example, if relatively specific aspects of the process and goal of the activity such as going on a trip to a particular place, being in the woods, seeing wildlife and the challenge of stalking a trophy bag are rated as very important to the experience that is provided by a particular activity, then the number of other activities which can offer this type of experience as a substitute is going to be limited to a relatively small number in which those specific aspects can be obtained.

If instead, more general factors such as being outdoors or enjoying nature are rated as very important to the experience, the number of activities which can offer the chance to obtain these parts of the experience is likely to be relatively large.

Similarly, if various aspects of the social interaction that accompanies the activity such as being with one's hunting companions or one's family are rated as very important to the experience provided by a particular activity, the number of other substitutable activities in which those aspects of social interaction can be achieved maybe smaller than if the accompanying social interaction is not rated as important or if only the more general aspects of social interaction, such as being with other hunters, are rated as important.

If the important aspects of an experience that is provided by an activity consist of many parts of the process, goal and social interaction, we would suspect that the particular activity would have fewer substitutes than one in which these were relevant to the activity but rated as less important (as in the current case of deer hunting and goose hunting) or where more general and more widely obtainable parts of the experience were rated as the important ones.

The model of recreational substitutability used here is one in which the individual is assumed to engage in an activity in order to achieve an experience characterized by various parts of the process, goal and social interaction accompanying the activity. A substitute, then, would be another activity in which an adequate number of these are perceived to be attainable.

In the current study (reported in Baumgartner, 1978) the two groups of hunters were asked what type of activity they would have been likely to engage in if they hadn't been able to hunt deer or geese during the 1977 season.

Nearly three-fourths of the goose hunters reported that they would have hunted for other game while less than half of the deer hunters indicated the same. Consistent with their stronger family ties to the activity deer hunters were more likely to report that they would have participated in some activity around the home. It is not clear from the data, however, whether this choice reflected an activity that was an adequate substitute for deer hunting or reflected the lack of any adequate recreational activity that could serve as a substitute for deer hunting.

The results of this investigation also illustrate the need for greater specificity of activities in substitutability research. Most research to date has dealt with broad, general categories of activities such as hunting, camping, boating or athletics. Within any of these categories, there are many styles of participation which could be perceived as very different types of experiences. For example, within the category "camping," individuals may engage in car camping, backpacking, wilderness camping, or camping in association with another activity such as canoeing or fishing

These various styles of camping require differences in planning, preparation and equipment and participants may have very different goals.

Using only the broad, generic terms in substitutability research doesn't give enough information for researchers or recreation managers to reach conclusions about what specific activity would substitute for another.

Finally, the present study suggests that there may be some activities for which no substitutes are perceived to exist by a large number of participants. One-fourth of the Wisconsin gun deer hunters said they had no substitutes for deer hunting. Twenty-three percent indicated that if they couldn't go deer hunting they would miss it more than all of the other interests they currently have. This means that should the activity be unavailable, given current participation rates, about 150,000 individuals would be without recreation substitute. On the other hand, only about 5 percent of the goose hunters are so committed suggesting that fewer than 5,000 goose hunters would be similarly impacted by a restriction of their activity.

Measures of reported substitutability and commitment to the activity along with participation rates can produce relative measures of impact, so when two or more activities are in conflict, managers can make better judgments about which to restrict or curtail.

Table 1

Ratings of Importance for Social Interaction Accompanying the Activity

SOCIAL INTERACTION ITEMS	Percent Indicating an Important Reason for their Interest in the Activity[a]		p[b]
	Goose Hunters (N=755)	Deer Hunters (N=230)	
To be with hunting companions	63%	90%	.001
To have a good time with friends and relatives	58	90	.001
To talk to other hunters in the field	20	45	.001

[a]An important response is the third of fourth category on a four-point scale.

[b]Significance tests are based on a one-tailed t-test for difference between proportions.

Table 2

Source of Introduction for Horicon Applicant
Goose Hunters and Wisconsin Deer Hunters

First Hunted With	Goose Hunters (N=755)	Deer Hunters (N=230)
Parent(s)	30%	46%
Friend or Neighbor	41	25
Other Relative	19	27
Alone	5	4
Not Certain	2	1
Other	3	1
Total	100%	104%[a]

[a]More than one response could be checked so total may be greater than 100%.

$\chi^2_5 = 10.3$, $p < .07$

Table 3

Comparison of the Number of Friends Who Are (Goose/Deer) Hunters for Horicon Applicant Goose Hunters and Wisconsin Deer Hunters

How Many of Your Friends Are (Goose/Deer Hunters?	Goose Hunters (N=755)	Deer Hunters (N=230)
All	3%	5%
Most	23	63
Some	40	23
A Few	33	8
None	1	1
Total	100%	100%
Mean Response[a]	2.9	3.6

$t = 10.15$, $p < .001$ (based on one-tailed test)

[a]Mean response based on response values of 1-5 for none to all, respectively.

Table 4

Ratings of the Importance of the Process and the Goal of the Activity

ASPECTS OF THE EXPERIENCE	Percent indicating an important reason for their interest in the activity[a]		p[b]
	Goose Hunters (N=755)	Deer Hunters (N=230)	
PROCESS OF THE ACTIVITY			
Going on a trip	22	65	.001
Going to a specific place	56	62	n.s.
Getting outdoors	81	89	n.s.
At least seeing some wildlife	74	99	.001
Getting a change of pace	73	89	.001
GOAL OF THE ACTIVITY			
To stalk or outsmart game	57	83	.001
To bag a trophy animal	34	68	.001
To bring game home	41	70	.001

[a]An important response is the third or fourth category on a four-point scale.

[b]Significance tests are based upon one tailed t-test for differences between proportions.

Table 5

Substitutability for Horicon Zone Goose Hunters and Wisconsin Deer Hunters

Indicators of Substitutability	Goose Hunters (N=755)	Deer Hunters (N=230)
NUMBER OF REPORTED SUBSTITUTES[a]		
Many or some	82%	41%
Few or more	18	59
	t = 13.56, p < .001	
IMPORTANCE OF THE ACTIVITY[a]		
Would miss the activity but not as much as a lot of other interests	79%	33%
Would miss it more than most or all of my other interests	21	67
	t = 11.61, p < .001	

[a]Responses were based on a four-point scale and a one-tailed t-test for difference between means was used.

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